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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,068	01/08/2002	Tomokuni Wauke	9281-4240	3902

7590 04/20/2005

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EXAMINER	
LE, DANG D	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/042,068	WAUKE, TOMOKUNI	
	Examiner	Art Unit	
	Dang D. Le	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-70* is/are pending in the application.

4a) Of the above claim(s) *3-8,11-35 and 37-69* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,9,10,36 and 70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/2/05 have been fully considered but they are not persuasive.

It is noted that in the art of motor it is well known in the art of motor and generator to make the stator with a stator core extending less than 90 degrees or 180 degrees. Schaeffer (4,315,171), Kishima (3,909,643), Leung et al. (5,610,492), Reffelt (4,564,793), Deavers et al. (4,563,622), and Brown et al. (4,553,075) all show the stator extending less than 90 degrees.

It is also well known the make the rotor and stator pitch either the same or different depending on the desired application. The different pitch is used for the purpose of reducing cogging torque (harmonic contents) or providing smooth operation. Field, II (4,255,696), Koike et al. (6,479,911), Isozaki (5,128,570), and Ikegami et al. (6,552,451) all show the feature.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine the references is in the knowledge generally available to one of ordinary skill in the art.

Regarding Schaeffer and Field, II references, Field, II does not have to have the property of having alternating polarity in a circumferential direction because Schaeffer already provides such feature. One having ordinary skill in the art does not need to replace the rotor of Schaeffer with the rotor of Field, II or any other components (such as a stator) of Schaeffer with any other components (such as a stator) of Field, II. One having ordinary skill in the art needs only to select proper stator tooth pitch relative to the rotor tooth pitch in Schaeffer's motor in order to reduce cogging torque as taught by Field, II.

Regarding Wavre and Schaeffer references, it is well known in the art of motor that the motor with more coils and more teeth provides more power than the motor with less stator teeth. However, the motor with fewer teeth requires less material and electricity to operate, hence less expensive. Therefore, it would have been obvious to one having ordinary skill in the art to make the stator with 360 degrees (in case of circular stator core, more teeth, more coils, more

power, more expensive) or with less than 90 degrees (less power, less expensive). As discussed above, the motivation to combine the references is in the knowledge generally available to one of ordinary skill in the art.

As a result, the rejections of claims 1, 2, 9, 10, 36 and 70 are still deemed proper and repeated hereinafter.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 9, 36 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schaeffer (4,315,171) in view of Field, II (4,255,696).

Regarding claim 1, Schaeffer shows all of the limitations of the claimed invention in Figure 22 except for the different pitch.

Field, II shows the rotor and stator pitches being different for the purpose of reducing cogging torque, thereby providing smooth operation.

Since Schaeffer and Field, II are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the pitch different as taught by Field, II for the purpose discussed above.

Regarding claims 2, 9, 36 and 70, it is noted that Leung et al. and Schaffer also show all of the limitations of the claimed invention including the stator extending not more than 90 degrees and six teeth (Figure 22, Schaffer).

4. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schaeffer (4,315,171) in view of Field, II (4,255,696) an further in view of Tamae et al.

Regarding claim 10, Schaeffer and Field shows all of the limitations of the claimed invention except for the disk apparatus.

Tamae et al. shows the motor to be used in a disk apparatus for automation purpose.

Since Schaeffer, Field, II, and Tamae et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the motor in a disk apparatus as taught by Tamae et al. for the purpose discussed above.

5. Claims 1, 2, 9, 10, 36 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wavre (5,642,013) in view of Schaeffer (4,315,171).

Regarding claim 1, Wavre shows an inner rotor motor (Figures 4, 9 and 15) comprising:

- A rotor (9) having a plurality of permanent magnetic poles (8) circumferentially arranged, and

- A stator (1) having a stator core that includes a plurality of magnetic pole teeth (25) opposing a circumference of the rotor, a single coil (31) being provided on each of the magnetic pole teeth the stator, the magnetic pole teeth each having a rotor-opposing surface,
- Wherein the stator extends 360 degrees with respect to a central angle of the rotor, and an annular pitch of the rotor-opposition surfaces and an annular pitch of the permanent magnet poles as measured about an axis of symmetry of the rotor differ from each other (Figure 4).

Wavre does not show the stator extending not more than 180 degrees with respect to a central angle of the rotor.

Schaeffer shows the stator extending not more than 180 degrees with respect to a central angle of the rotor (Figure 22) for the purpose of making better utility of laminations stock.

Since Wavre and Schaeffer are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to extend the stator not more than 180 degrees as taught by Schaeffer for the purpose discussed above.

Regarding claims 2, 9, 10, 36 and 70, it is noted that Wavre and Schaeffer also shows all of the limitations of t eh claimed invention including the stator extending not more than 90 degrees and six teeth.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information on How to Contact USPTO

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

4/15/05

DANG LE
PRIMARY EXAMINER